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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,121	01/31/2002	Robert P. Benjey	01-ASD-224 (GT)	5887
200	7590	06/09/2004	EXAMINER	
EATON CORPORATION EATON CENTER 1111 SUPERIOR AVENUE CLEVELAND, OH 44114			RIVELL, JOHN A	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/060,121	Applicant(s) BENJEY, ROBERT P.	
	Examiner John Rivell	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/24/04 (declaration & arguments).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 1-12 remain pending.

The declaration under 37 CFR 1.132 filed March 24, 2004 is insufficient to overcome the rejection of claims 1-12 based upon 35 U.S.C. §103(a) as unpatentable over Hashimoto et al. in view of Benjey ('655) as set forth in the last Office action because the allegation of failure of the device of the proposed combination to operate "under several publicly available operating modes" is not the standard to which obviousness is judged and the evidence in support of such a conclusion does not in fact render the device inoperative, i.e. unable to work at all times.

Considering applicants supporting evidence, the allegation in paragraph 5, that "in the event a true 'zero' leak mechanical seal were added" in Hashimoto et al. "the net result would be a premature nozzle shutoff and inability to fill the tank" clearly implies that the nozzle was in fact operative at some time in order to prematurely shut off. When the nozzle of Hashimoto et al. is open fuel is passing into the tank and the device would necessarily recirculate some fuel vapor from the top of the tank back into the filler neck as disclosed. An inability to completely fill the tank is more an annoyance to the user rather than a conclusion that the device of the combination fails to work.

Concerning the allegations in paragraph 6 of the declaration, it is agreed in principle that any high pressure in area 21 of the cup of Hashimoto et al. would be passed to the top of the diaphragm valve 11 thus tending to close off the vapor vent passage 8 to the canister. However, any pressure value in the tank vapor vent port 6, as a result of incoming liquid fuel compressing fuel vapor above the level of liquid fuel in the tank would certainly be greater than any potential high pressure value in the cup

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area 21, thus overcoming any closure force on the diaphragm valve and permitting venting of the vapor to the canister. This may effect a dangerous high pressure condition in the tank which may not be suitable for commercial purposes but this result does not prove that this embodiment does not work.

Moreover, as fuel is supplied by nozzle "N" the area 21 in Hashimoto et al. is subject to vacuum conditions by the act of the "jetting" caused by the inrush of fuel regardless of the temperature of the fuel. Any erratic vapor pressure conditions as a result of supplied fuel temperature and/or temperature of the fuel tank manifest themselves inside of the tank not in the area 21 as all fuel is supplied to the filler neck in an area beyond area 21.

Concerning paragraph 7, while the use of certain specific fill nozzles are not compatible with the design of the fueling system of Hashimoto et al., the use of certain fuel nozzles, such as those which are not equipped with an automatic shutoff device can be used with the fill neck of Hashimoto et al. and produce the disclosed fuel vapor recirculation disclosed.

In general the test for obviousness does not revolve around public acceptance of a device of a proposed combination of elements reasonably suggested by the prior art. Rather, it is well settled that the proposed modifications cannot render the prior art unsatisfactory for its intended purpose, the proposed modification cannot change the principle of operation of a reference and there must be a reasonable expectation of success.

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Here, the proposed modification to Hashimoto et al. does not render it unsatisfactory for its intended purpose in that at least some fuel vapor will be recirculated. If it were desired to recirculate even more fuel vapor, one can clearly employ the relief valve 22 taught by Benjey ('655) in the filler neck of Hashimoto et al. to provide for pressure relief and failed nozzle relief (Benjey ('655), col. 2, lines 61-63). Further, in concert with applicants arguments that "in order to effectuate the structural combination proposed by the Examiner, the system of Hashimoto et al. would have to be re-worked to either remove or reconfigure the orifices, 18b. Such re-work would be tenuous, experimental and certainly beyond pale of obviousness", it is to be presumed that skilled workers would as a matter of course, if they do not immediately obtain desired results, make certain experiments and adaptations, within the skill of the competent worker. The failures of experimenters who have no interest in succeeding should not be accorded great weight. *In re Michalek*, 162 F.2d 229, 74 USPQ 107 (CCPA 1947); *In re Reid*, 179 F.2d 998, 84 USPQ 478 (CCPA 1950).

As to the a reasonable expectation of success as set forth below the teachings of Benjey ('655) include the modification of adding the relief valve 22. By adding the mechanical seal and the relief valve 22 of Benjey ('655), for the purpose of preventing leakage of fuel vapor about the fill nozzle and to permit pressure relief and/or nozzle failure relief as a result of certain pressure conditions existing in the "cup" area to the device of Hashimoto et al. there is a reasonable expectation that the resulting device does not permit fuel vapor leakage about the fill nozzle "N" and to permit pressure relief

and/or nozzle failure relief as a result of certain pressure conditions existing in the cup area 21.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. in view of Benjey (5,950,655).

The patent to Hashimoto et al. discloses a "system for controlling flow of liquid fuel and vapor during refueling of a motor vehicle fuel tank (2) with a filler tube (3) for receiving a fuel dispensing nozzle (N) comprising: (a) a vent valve (5 or 6) disposed in the tank (2) and having an inlet (at 5, 6a) communicating with the vapor dome in the tank (2) and an outlet (7 or 8) communicating with a remote vapor storage device (9); (b)... (c) a recirculation conduit (18) connected to admit fuel vapor to the filler neck (3) at a location downstream of the seal; and, (d) a neck portion (the lower left side of tube 3 as shown in fig. 4) in the filler tube (3) downstream of the location of said recirculation conduit (18) connection location, wherein said neck has an inner periphery thereof sized to receive the nozzle (N) in closely fitting arrangement and to form an effective dynamic seal about the liquid discharging from the nozzle" (N) as claimed in claim 1. The "dynamic seal" formed therein is considered to be "effective" in that a negative pressure condition is created within the chamber area 21 (column 7, lines 13-22).

Thus Hashimoto et al. discloses all the claimed features with the exception of having a seal disposed in the filler tube (3) and operable for sealing about the nozzle (N) upon insertion therein".

The patent to Benjey ('655) discloses that it is known in the art to employ a nozzle "seal (24) disposed in the filler neck (upper end13 of neck/pipe 12) and operable foe sealing about the nozzle (20) upon insertion therein" for the purpose of minimize fuel vapor leakage (fuel vapor fed back to the filler neck 13 by line 28 when the level of fuel in tank 10 is below the "full" line 30) to atmosphere from the fuel filler neck during refueling. Commensurate with this seal 24 is a "pressure and nozzle failure relief" valve 22.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hashimoto et al. a nozzle seal element, disposed in the fuel filler neck and attached to element 19 and a bypass relief valve in the plate including the fuel nozzle receiving hole for the purpose of minimizing fuel vapor leakage to atmosphere from the fuel filler neck during refueling as recognized by Benjey ('655).

Regarding claim 4, in Hashimoto et al., the "recirculation conduit (18) has one end connected through the wall of the tank (2) and an end opposite said one end connected to the filler tube (3) at said location" as claimed.

Regarding claim 5, in Hashimoto et al., both "said vent valve(s) (5 and 6 are) float operated" as claimed.

Regarding claims 7 and 9 the method steps recited therein are clearly those practiced when making and/or using the device of Hashimoto et al. as modified by Benjey ('655).

Regarding claim 6 and 9, while the patent is silent as to dimensions, the disclosure, along with the reasonable inference drawn from figure 4, is believed to reasonably suggest to one of ordinary skill in the art that a ratio of diameter of fuel nozzle N to diameter of the fuel filler neck 3 at the point in insertion of the nozzle into

the narrowest section of the fuel neck (at reference arrow 3) which forms the necessary jetting action to form a vacuum in the chamber at reference 21 is present. What that specific ratio is to be, other than the apparent desire to have the diameter of the fuel neck slightly larger than the diameter of the nozzle, however is not specifically apparent from the figures.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ any desired ration of diameter of fill nozzle to diameter of fuel neck in which an optimum vacuum is created in chamber 21 to assure fuel vapor fed to the fuel neck 3 from the fuel tank during refueling is recirculated back down the fuel neck with incoming liquid fuel , since it has been held that where the general conditions of a claim are disclosed in the prior art, as is believed here, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 2, 3, 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. in view of Benjey ('655), as applied to claims 1, 4, 5, 7 and 9 above, further in view of Yamazaki et al.

The patent to Hashimoto et al., as modified by Benjey ('655), discloses all the claimed features with the exception of having a check valve in the recirculation line and having the "end" opposite the filler tube end of the recirculation line connected to a line connecting the vent valve and the storage device.

The patent to Yamazaki et al. discloses, in figure 9 for example, that it is known in the art to employ a vapor recirculation line 27₃ connected between a line 23a connecting the float vapor vent valve 25 to a vapor storage device "C" and the filler tube 22a', which recirculation line 27₃ includes a check valve 62 therein for the purpose of

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recirculating vapor conducted to the storage device from the vent valve back to the filler tube, and to control the direction of vapor flow within the recirculation tube.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hashimoto et al., as modified by Benjey ('655), a vapor recirculation line connected between line 7 or 8 connecting the float vapor vent valve 5 or 6 to vapor storage device 9 and the filler tube 3, which recirculation line includes a check valve therein for the purpose of recirculating vapor conducted to the storage device from the vent valve back to the filler tube, and to control the direction of vapor flow within the recirculation tube as recognized by Yamazaki et al.

Regarding claim 12, the comments made above concerning claims 6 and 11 apply here as well.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

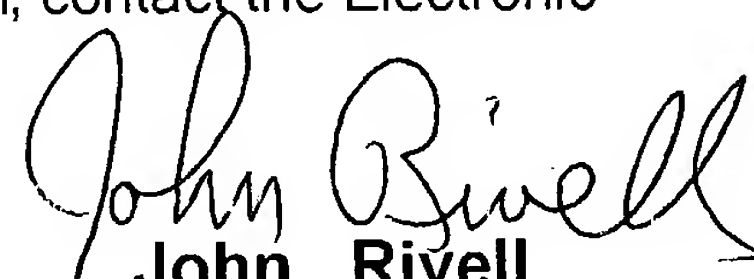
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (703) 308-2599. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Rivell
Primary Examiner
Art Unit 3753

j.r.